PATENT ABSTRACTS OF JAPAN

(11)Publication number:

2001-119065

(43)Date of publication of application: 27.04,2001

(51)Int.CI.

H01L 33/00

(21)Application number: 11-293319

(71)Applicant: MATSUSHITA ELECTRIC IND CO

(22)Date of filing:

15.10.1999

(72)Inventor: SHINAGAWA SHUICHI

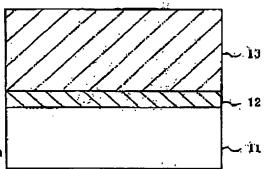
KAMEI HIDENORI TAKEISHI HIDEMI

(54) P-TYPE NITRIDE SEMICONDUCTOR AND PRODUCING METHOD THEREOF

(57)Abstract:

PROBLEM TO BE SOLVED: To obtain a high quality ptype nitride semiconductor without requiring any annealing after growth.

SOLUTION: After the substrate temperature is raised to about 1,050° C, nitrogen gas and hydrogen gas are introduced as carrier gas at a flow rate of about 13 L/min and 3 L/min, respectively, for about 60 min onto a substrate 11 along with ammonia gas at a flow rate of about 4 L/min, TMG at a flow rate of about 80 μmol/min and Cp2Mg at a flow rate of about 0.2 µmol/min thus growing on a buffer layer 12 a p-type nitride semiconductor layer 13 of Mg doped GaN by 2 μ m thick. Subsequently, the substrate temperature is lowered from the growth temperature of 1,050° C to the vicinity of 600° C in 5 min thus obtaining a p-type nitride semiconductor having hole carrier density of 1.2 × 1017 cm-3.



LEGAL STATUS

[Date of request for examination]

15.10.1999

[Date of sending the examiner's decision of

06.11.2001

rejection]

[Kind of final disposal of application other than

the examiner's decision of rejection or

application converted registration]

[Date of final disposal for application].

[Patent number]

3522610

[Date of registration]

20.02.2004

[Number of appeal against examiner's decision 2001-21834

of rejection]

[Date of requesting appeal against examiner's

06,12,2001

decision of rejection]

[Date of extinction of right]